

## Claims

- [1] A method for obtaining traffic information using billing information of a mobile terminal, comprising the steps of:  
receiving call data based on a telephone call made by the terminal;  
extracting unique information of the terminal from the received call data;  
requesting that position information be transmitted at unit-time intervals for a position tracking operation according to the extracted unique information of the terminal;  
tracking a moving path and time of the terminal between base stations according to the transmitted position information; and  
producing an average speed per hour between base stations according to the tracked moving path and time.
- [2] The method as set forth in claim 1, wherein the base stations are installed and managed on a highway.
- [3] The method as set forth in claim 1 or 2, wherein the specified information of the terminal is a terminal identification number.
- [4] The method as set forth in claim 1 or 2, wherein the unit-time intervals for the position tracking operation associated with a position information registration request are maintained as 30-second intervals.
- [5] The method as set forth in claim 1 or 2, wherein the position information is transmitted together with a wakeup signal.
- [6] The method as set forth in claim 1 or 2, wherein a sample object is selectively extracted on a section-by-section basis or in each section when the unique information of the terminal is extracted from the received call data.
- [7] The method as set forth in claim 6, wherein the section is formed by a group of one to seven base stations.
- [8] The method as set forth in claim 6, wherein there is at least one sample object on a section-by-section basis.
- [9] The method as set forth in claim 6, wherein an operation for tracking a lower-priority sample object is terminated when sample objects are concentrated on the section-by-section basis.
- [10] The method as set forth in claim 9, wherein the number of sample objects in a corresponding section is increased for a predetermined time, a tracking operation for normally moving sample objects is carried out and a tracking operation for

another sample object is terminated, when sample objects are concentrated on the section-by-section basis and an operation for tracking the sample object is terminated the predetermined number of times.

- [11] The method as set forth in claim 6, wherein an operation for tracking a lower-priority sample object is carried out and an operation for tracking a first priority sample object is terminated, when sample objects are concentrated on a section-by-section basis due to a difference between distances of sections and a difference between moving speeds of the sample objects.
- [12] The method as set forth in claim 1 or 2, wherein the average speed per hour between the base stations is produced by dividing a distance between the base stations based on the moving path by the moving time.
- [13] The method as set forth in claim 1, wherein the average speed per hour is estimated as a maximum speed on a highway when no call data is received when receiving the call data.
- [14] The method as set forth in claim 1, wherein the step of producing the average speed per hour between the base stations comprises the step of:  
adding a reference time to a unit-time interval for the position tracking operation when a movement between the base stations is not present, and producing the result of the addition.
- [15] The method as set forth in claim 14, wherein the reference time is 2 minutes.
- [16] The method as set forth in claim 2, further comprising the step of:  
terminating the tracking operation when a setup operation is carried out between the terminal and a different base station other than the base stations installed and managed on the highway.
- [17] The method as set forth in claim 16, wherein the tracking operation is terminated when the setup operation is carried out between the terminal and the different base station other than the base stations installed and managed on the highway twice or more.
- [18] The method as set forth in claim 2, wherein the base stations installed and managed on the highway have one sector dedicatedly assigned for the highway, respectively.
- [19] A method for obtaining traffic information using billing information of a mobile terminal, comprising the steps of:  
receiving call data based on a telephone call attempted by the terminal;  
extracting unique information of the terminal from the received call data;

determining whether handoff data has been generated according to the extracted unique information of the terminal;

if the handoff data has been generated, tracking a moving path and time of the terminal between base stations according to a handoff signal; and

producing an average speed per hour between the base stations according to the tracked moving path and time.

- [20] The method as set forth in claim 19, wherein the base stations are installed and managed on a highway.
- [21] The method as set forth in claim 19 or 20, further comprising the step of: terminating the tracking when the terminal terminates the telephone call.
- [22] The method as set forth in claim 19 or 20, further comprising the step of: if the handoff data has not been generated, terminating the tracking.
- [23] The method as set forth in claim 19 or 20, wherein the specified information of the terminal is a terminal identification number.
- [24] The method as set forth in claim 19 or 20, wherein the average speed per hour between the base stations is produced by dividing a distance between the base stations based on the moving path by the moving time.
- [25] The method as set forth in claim 20, further comprising the step of: when a setup operation is carried out between the terminal and a different base station other than the base stations installed and managed on the highway, terminating the tracking.
- [26] The method as set forth in claim 25, wherein the tracking is terminated when the setup operation is carried out between the terminal and the different base station other than the base stations installed and managed on the highway twice or more.
- [27] The method as set forth in claim 19 or 20, wherein the step of producing the average speed per hour between the base stations comprises the step of: grouping two to seven base stations and producing the average speed in a predetermined section.
- [28] The method as set forth in claim 20, wherein the base stations installed and managed on the highway have one sector dedicatedly assigned for the highway.
- [29] A method for obtaining traffic information using billing information, comprising the steps of:  
setting a reference value of a traffic state according to the number of generated telephone calls associated with a corresponding base station on a time zone-by-zone basis;

extracting telephone calls associated with the base station at predetermined time intervals;

comparing the number of the extracted telephone calls with the reference value;

and

setting a traffic class of a corresponding base station area according to an increase or decrease based on a result of the comparison.

[30] The method as set forth in claim 29, wherein the base station is installed and managed on a highway.

[31] The method as set forth in claim 30, wherein the base station installed and managed on the highway has one sector dedicatedly assigned for the highway.

[32] The method as set forth in claim 30 or 31, wherein the predetermined time intervals are 5-minute intervals.